



DEPARTMENT OF THE NAVY

COMMANDER
NAVY REGION HAWAII
850 TICONDEROGA ST STE 110
JBPHH, HAWAII 96860-5101

OCT 16 2015 RLC

5090
Ser N45/806
October 13, 2015

CERTIFIED NO: 7014 1200 0000 9858 8388

Mr. Richard Takaba
Hawaii State Department of Health
Environmental Management Division
Solid and Hazardous Waste Branch
Underground Storage Tank Section
919 Ala Moana Boulevard, Room 212
Honolulu, HI 96814

Dear Mr. Takaba:

SUBJECT: RED HILL TANK COMPLEX
SOIL VAPOR SAMPLING RESULTS FOR SEPTEMBER 2015
DOH FACILITY ID NO. 9-102271
DOH RELEASE ID NO. 990051, 010011, 020028, AND 140010

Soil vapor samples were collected from beneath all active and accessible Red Hill Tanks on September 23, 2015.

Soil vapor VOC concentrations were measured in the field using a photo-ionization detector. The soil vapor sampling results are being submitted as Enclosure 1.

A conservative approach is to assess the integrity of the associated tank system if VOC concentrations exceed 280,000 ppbv in soil vapor monitoring points (SVMPs) beneath tanks containing JP-5 or JP-8, or 14,000 ppbv in SVMPs beneath tanks containing marine diesel fuel. These values are 50 percent of the calculated vapor concentration from fuel-saturated water.

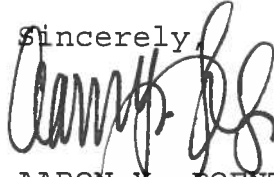
At Tank 5, the concentrations of VOCs detected in the front, middle, and outer edge soil vapor monitoring probes were 148,667 ppbv, 103,123 ppbv, and 126,433 ppbv, respectively. These soil vapor VOC concentrations were below the action level of 280,000 ppbv. All other VOC concentrations measured in September were about 20 to 6,000 times below the action levels, with no consistent trending.

Soil vapor VOC concentration trends will continue to be monitored. The next soil vapor sampling event is scheduled for October 2015, and will include collecting samples from soil vapor monitoring probes beneath all active and accessible tanks.

5090
Ser N45/806
October 13, 2015

If there are any questions regarding this matter, or if more information is needed, please contact Ms. Raelynn Kishaba at (808) 471-1171, extension 233.

Sincerely,



AARON Y. POENTIS
Director
Regional Environmental Department
By direction of the
Commander

Enclosure: 1. Summary of Soil Vapor Sampling Results for
Tanks 2 through 18 and 20 through September
2015 (36 pages)

Copy to: LCDR Andrew Lovgren, NAVSUP FLC Pearl Harbor
Mr. Rockne Krill, DLA Energy Pacific

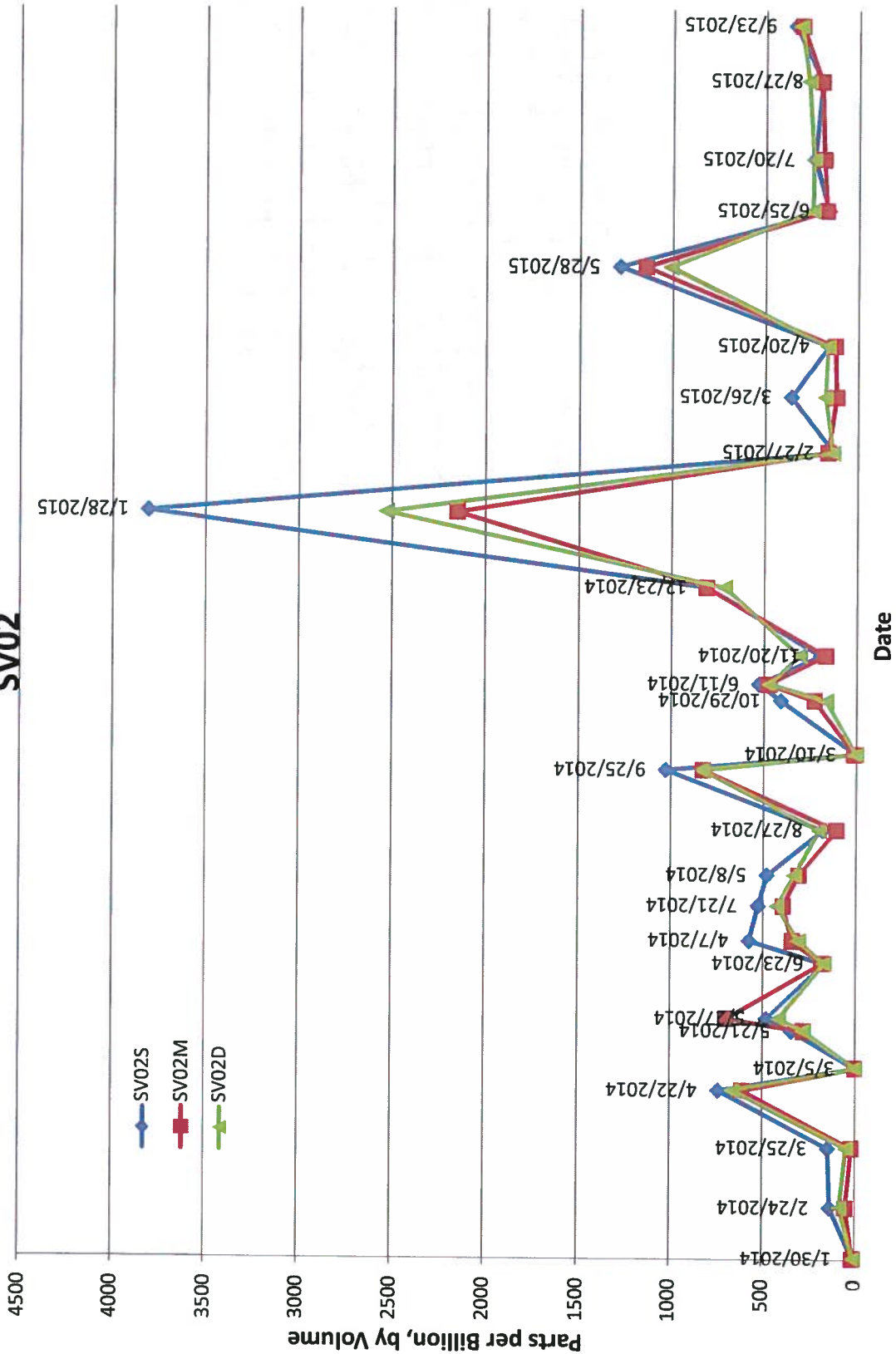
Table 1
Soil Vapor Results for SV02 (ppbv)
Historical Soil Vapor Monitoring Results - January 2014 Through Present Event
Red Hill Bulk Fuel Storage Facility

| Date | SV02S | SV02M | SV02D |
|------------|-------|-------|-------|
| 1/30/2014 | 11 | 11 | 8 |
| 2/24/2014 | 135 | 51 | 82 |
| 3/5/2014 | 1 | 0 | 0 |
| 3/10/2014 | 1 | 11 | 1 |
| 3/25/2014 | 146 | 19 | 47 |
| 4/7/2014 | 575 | 342 | 308 |
| 4/22/2014 | 739 | 610 | 662 |
| 5/8/2014 | 481 | 308 | 333 |
| 5/21/2014 | 344 | 280 | 278 |
| 5/27/2014 | 481 | 697 | 413 |
| 6/11/2014 | 527 | 475 | 468 |
| 6/23/2014 | 170 | 183 | 169 |
| 7/21/2014 | 527 | 392 | 426 |
| 8/27/2014 | 180 | 105 | 199 |
| 9/25/2014 | 1028 | 827 | 830 |
| 10/29/2014 | 409 | 227 | 164 |
| 11/20/2014 | 194 | 167 | 309 |
| 12/23/2014 | 810 | 811 | 715 |
| 1/28/2015 | 3808 | 2150 | 2530 |
| 2/27/2015 | 129 | 160 | 133 |
| 3/26/2015 | 360 | 115 | 176 |
| 4/20/2015 | 157 | 123 | 164 |
| 5/28/2015 | 1285 | 1146 | 1011 |
| 6/25/2015 | 159 | 172 | 248 |
| 7/20/2015 | 238 | 187 | 243 |
| 8/27/2015 | 196 | 199 | 270 |
| 9/23/2015 | 341 | 305 | 311 |

ppbv: parts per billion by volume

NC: Not collected

Figure 1
Soil Vapor Measurements
SV02



ENCLOSURE

Table 2
Soil Vapor Results for SV03 (ppbv)
Historical Soil Vapor Monitoring Results - January 2014 Through Present Event
Red Hill Bulk Fuel Storage Facility

| Date | SV03S | SV03M | SV03D |
|------------|-------|-------|--------|
| 1/30/2014 | 41 | 46 | 9444 |
| 2/24/2014 | 70 | 162 | 5290 |
| 3/5/2014 | 20 | 17 | 26800 |
| 3/10/2014 | 8 | 27 | 5922 |
| 3/25/2014 | 87 | 385 | 274000 |
| 4/7/2014 | 676 | 1054 | 12300 |
| 4/22/2014 | 1056 | 1266 | 2442 |
| 5/8/2014 | 877 | 1096 | 1525 |
| 5/21/2014 | 1085 | 1378 | 1864 |
| 5/27/2014 | 915 | 1278 | 1536 |
| 6/11/2014 | 1148 | 1138 | 1424 |
| 6/23/2014 | 1970 | 2931 | 3530 |
| 7/21/2014 | 1021 | 1133 | 1215 |
| 8/27/2014 | 749 | 885 | 1050 |
| 9/25/2014 | 1298 | 1214 | 1187 |
| 10/29/2014 | 199 | 222 | 254 |
| 11/20/2014 | 731 | 919 | 856 |
| 12/23/2014 | 1403 | 1860 | 2004 |
| 1/28/2015 | 8037 | 10300 | 8075 |
| 2/27/2015 | 422 | 2231 | 435 |
| 3/26/2015 | 210 | 236 | 554 |
| 4/20/2015 | 363 | 422 | 436 |
| 5/28/2015 | 5289 | 6657 | 6075 |
| 6/25/2015 | 287 | 435 | 386 |
| 7/20/2015 | 849 | 880 | 880 |
| 8/27/2015 | 381 | 496 | 576 |
| 9/23/2015 | 2316 | 1334 | 1223 |

ppbv: parts per billion by volume

Figure 2
Soil Vapor Measurements
SV03

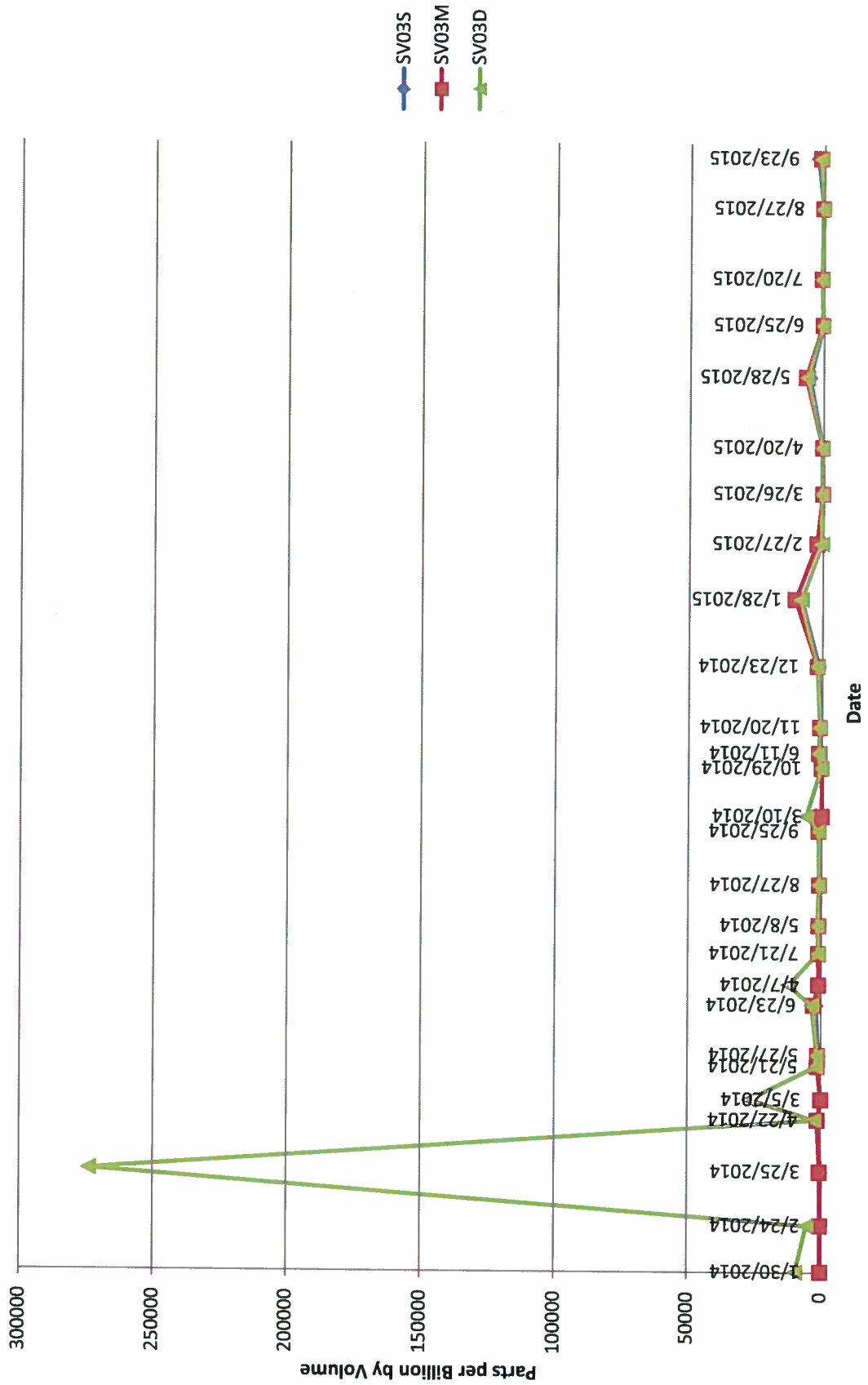


Table 3
Soil Vapor Results for SV04 (ppbv)
Historical Soil Vapor Monitoring Results - January 2014 Through Present Event
Red Hill Bulk Fuel Storage Facility

| Date | SV04S | SV04M | SV04D |
|------------|-------|-------|-------|
| 1/30/2014 | 132 | 165 | 135 |
| 2/24/2014 | 163 | 149 | 138 |
| 3/5/2014 | 536 | 493 | 520 |
| 3/10/2014 | 116 | 51 | 72 |
| 3/25/2014 | 9682 | 11800 | 9134 |
| 4/7/2014 | 1382 | 1217 | 1035 |
| 4/22/2014 | 769 | 948 | 870 |
| 5/8/2014 | 658 | 721 | 748 |
| 5/21/2014 | 666 | 861 | 944 |
| 5/27/2014 | 540 | 670 | 817 |
| 6/11/2014 | 657 | 762 | 754 |
| 6/23/2014 | 98 | 1075 | 1233 |
| 7/21/2014 | 557 | 625 | 735 |
| 8/27/2014 | 245 | 296 | 210 |
| 9/25/2014 | 614 | 612 | 512 |
| 10/29/2014 | 194 | 136 | 139 |
| 11/20/2014 | 409 | 315 | 373 |
| 12/23/2014 | 1265 | 1311 | 1483 |
| 1/28/2015 | 14800 | 13400 | 14800 |
| 2/27/2015 | 370 | 343 | 217 |
| 3/26/2015 | 682 | 488 | 814 |
| 4/20/2015 | 339 | 336 | 268 |
| 5/28/2015 | 8401 | 8427 | 10500 |
| 6/25/2015 | 233 | 276 | 295 |
| 7/20/2015 | 179 | 241 | 385 |
| 8/27/2015 | 209 | 357 | 406 |
| 9/23/2015 | 460 | 376 | 304 |

ppbv: parts per billion by volume

Figure 3
Soil Vapor Measurements
SV04

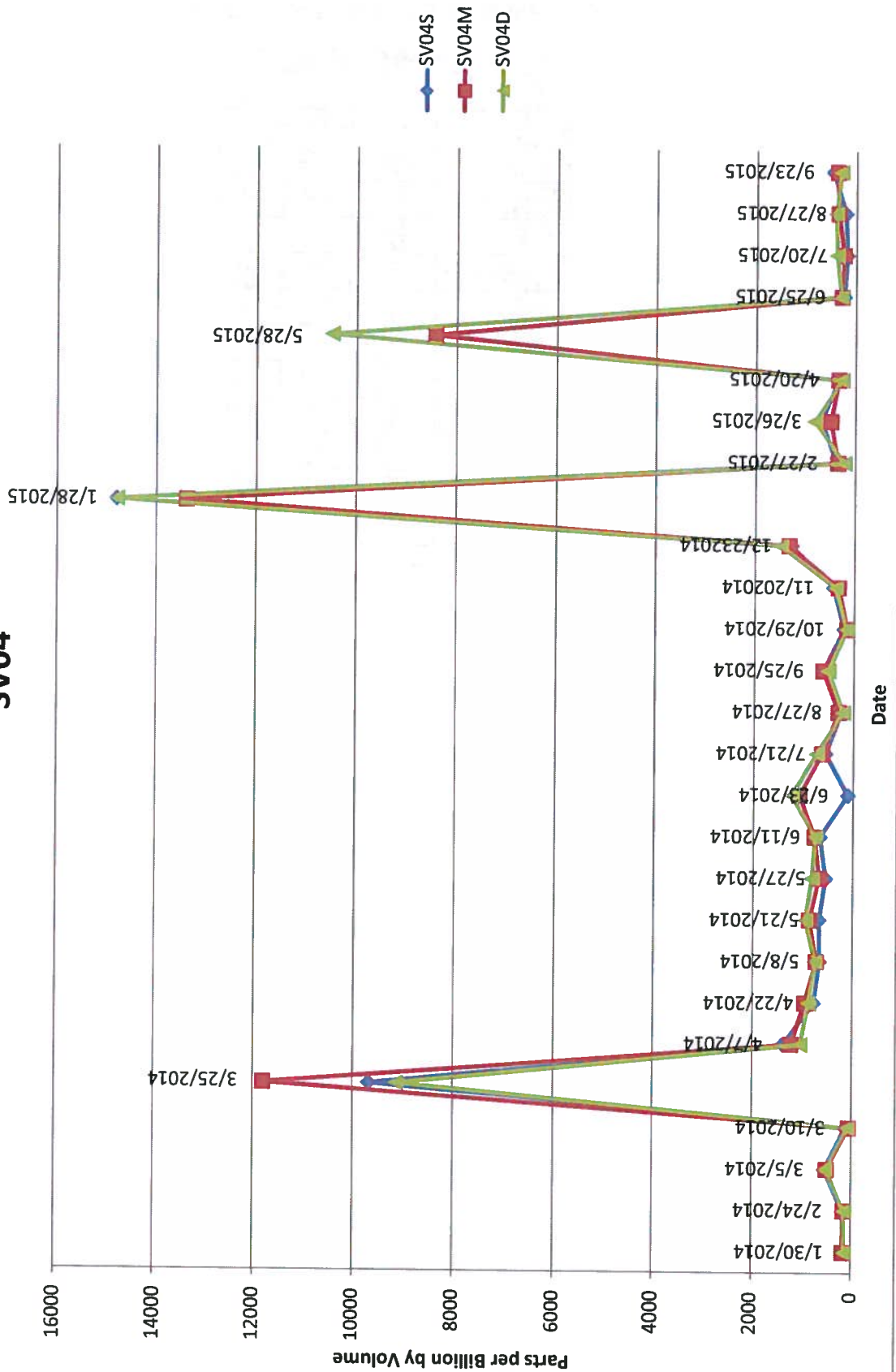


Table 4
Soil Vapor Results for SV05 (ppbv)
Historical Soil Vapor Monitoring Results - January 2014 Through Present Event
Red Hill Bulk Fuel Storage Facility

| Date | SV05S | SV05M | SV05D |
|------------|--------|--------|--------|
| 1/15/2014 | 96 | 225000 | 204000 |
| 1/30/2014 | 818 | 150000 | 176000 |
| 2/24/2014 | 597 | 68200 | 100000 |
| 3/5/2014 | 492 | 96600 | 217000 |
| 3/10/2014 | 308 | 111000 | 204000 |
| 3/21/2014 | 593 | 99600 | 182000 |
| 3/25/2014 | 3144 | 271000 | 209000 |
| 4/3/2014 | 43700 | 384000 | 426000 |
| 4/7/2014 | 76100 | 413000 | 401000 |
| 4/16/2014 | 106000 | 437000 | 398000 |
| 4/22/2014 | 105000 | 383000 | 381000 |
| 5/1/2014 | 159000 | 450000 | 426000 |
| 5/8/2014 | 130000 | 377000 | 327000 |
| 5/15/2014 | 165000 | 401000 | 337000 |
| 5/21/2014 | 131000 | 415000 | 380000 |
| 5/27/2014 | 125000 | 369000 | 349000 |
| 6/3/2014 | 134000 | 341000 | 359000 |
| 6/11/2014 | 105000 | 288000 | 279000 |
| 6/19/2014 | 173000 | 284000 | 309000 |
| 6/23/2014 | 34500 | 45600 | 78700 |
| 7/9/2014 | 39700 | 277000 | 267000 |
| 7/21/2014 | 111000 | 234000 | 237000 |
| 8/27/2014 | 148000 | 205000 | 222000 |
| 9/25/2014 | 94500 | 208000 | 195000 |
| 10/29/2014 | 57400 | 180000 | 177000 |
| 11/20/2014 | 82200 | 198000 | 229000 |
| 12/23/2014 | 70100 | 102000 | 97000 |
| 1/28/2015 | 97900 | 172000 | 208000 |
| 2/27/2015 | 66300 | 136000 | 189000 |
| 3/26/2015 | 75200 | 88900 | 73800 |
| 4/20/2015 | 245000 | 158000 | 150000 |
| 5/28/2015 | 287000 | 143000 | 171000 |
| 6/25/2015 | 83800 | 93000 | 153000 |
| 7/21/2015 | 73400 | 79800 | 175000 |
| 8/27/2015 | 84000 | 81000 | 135000 |
| 9/23/2015 | 148667 | 103123 | 126433 |

ppbv: parts per billion by volume

NC1: Not collected due to maintenance work

Action Level (ppbv)= 280,000

Figure 4
Soil Vapor Measurements
SV05

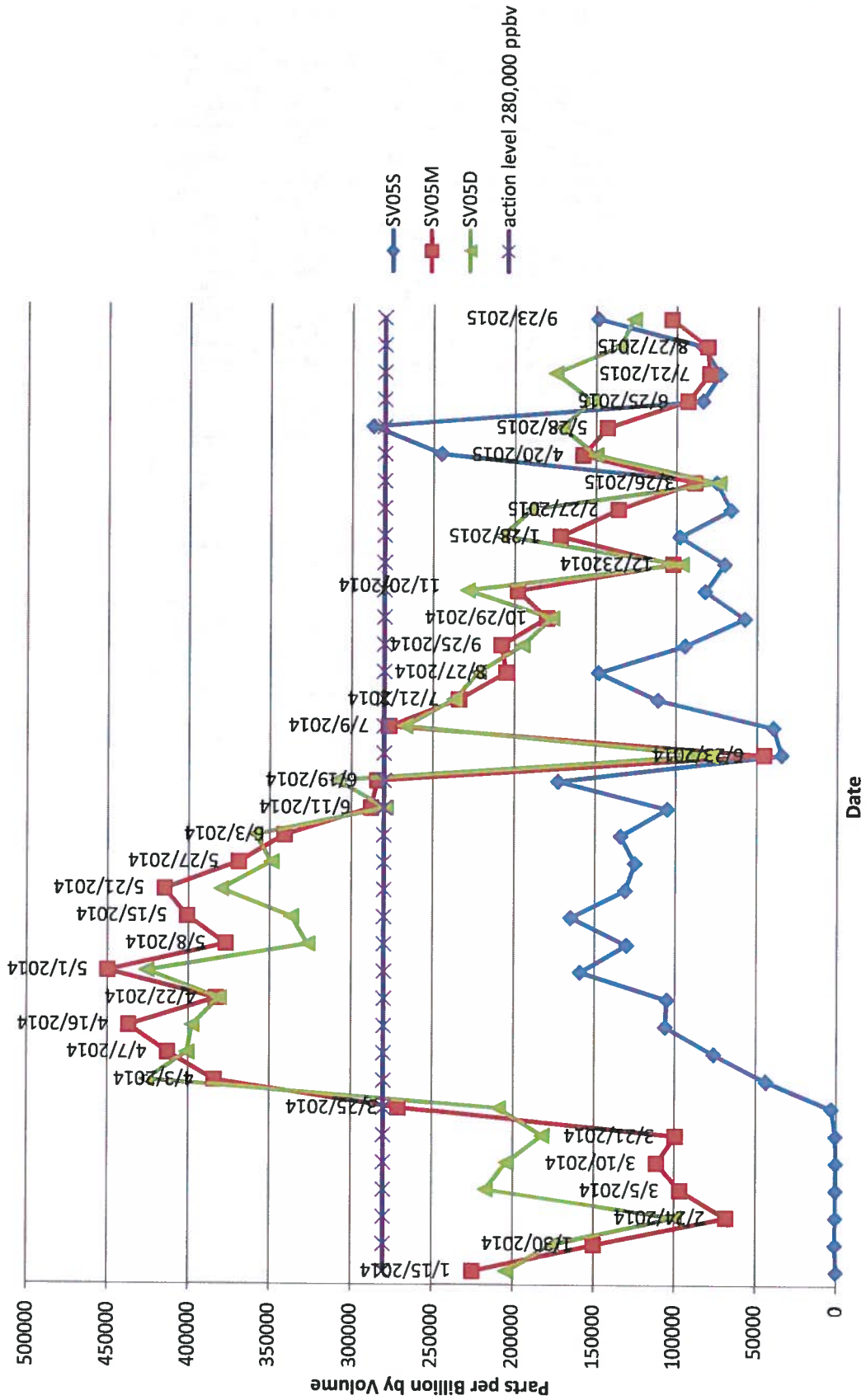


Table 5
Soil Vapor Results for SV06 (ppbv)
Historical Soil Vapor Monitoring Results - January 2014 Through Present Event
Red Hill Bulk Fuel Storage Facility

| Date | SV06S | SV06M |
|-------------|--------------|--------------|
| 1/30/2014 | 6424 | 4097 |
| 2/24/2014 | 3046 | 1457 |
| 3/5/2014 | 6165 | 2033 |
| 3/10/2014 | 7204 | 1644 |
| 3/21/2014 | 195 | 605 |
| 3/25/2014 | 2169 | 551 |
| 4/3/2014 | 32000 | 18600 |
| 4/7/2014 | 23100 | 18800 |
| 4/16/2014 | 31000 | 14900 |
| 4/22/2014 | 31100 | 27300 |
| 5/1/2014 | 35500 | 21400 |
| 5/8/2014 | 23900 | 15900 |
| 5/15/2014 | 1948 | 365 |
| 5/21/2014 | 43600 | 24500 |
| 5/27/2014 | 31900 | 17000 |
| 6/3/2014 | 38900 | 23300 |
| 6/11/2014 | 23800 | 12600 |
| 6/19/2014 | 18100 | 10400 |
| 6/23/2014 | 2747 | 314 |
| 7/9/2014 | 29600 | 25400 |
| 7/21/2014 | 21900 | 21600 |
| 8/27/2014 | 31200 | 14000 |
| 9/25/2014 | 28000 | 18700 |
| 10/29/2014 | 12600 | 11000 |
| 11/20/2014 | 17100 | 4886 |
| 12/23/2014 | 10900 | 9042 |
| 1/28/2015 | 2051 | 482 |
| 2/27/2015 | 17700 | 6909 |
| 3/26/2015 | 11500 | 7734 |
| 4/20/2015 | 13300 | 8747 |
| 5/28/2015 | 763 | 33 |
| 6/25/2015 | 4536 | 3873 |
| 7/21/2015 | 11000 | 6679 |
| 8/27/2015 | 718 | 731 |
| 9/23/2015 | 486 | 130 |

ppbv: parts per billion by volume

Figure 5
Soil Vapor Measurements
SV06

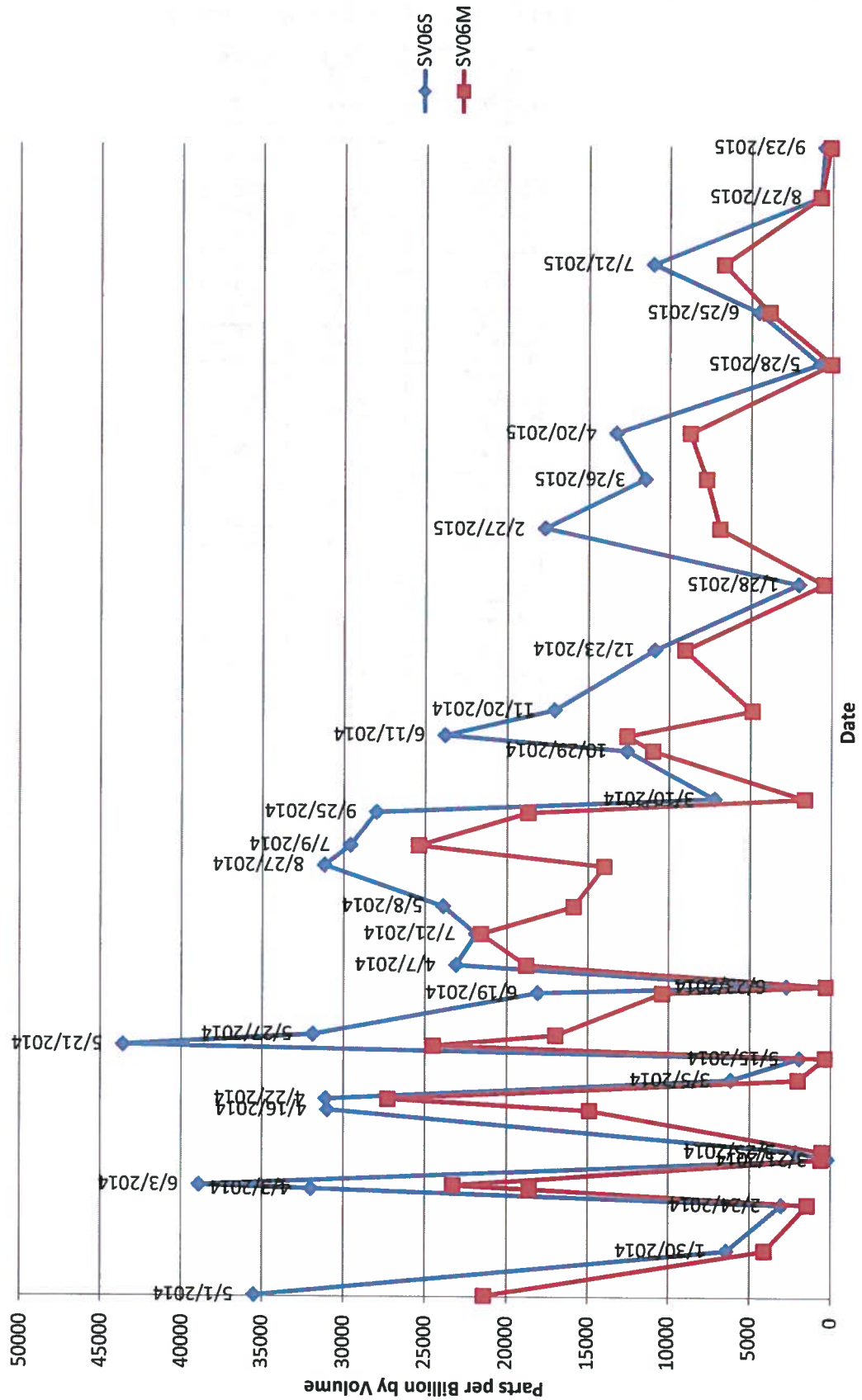


Table 6
Soil Vapor Results for SV07 (ppbv)
Historical Soil Vapor Monitoring Results - January 2014 Through Present Event
Red Hill Bulk Fuel Storage Facility

| Date | SV07S | SV07M | SV07D |
|------------|-------|-------------------|-------|
| 1/30/2014 | 6350 | 6539 | 5180 |
| 2/24/2014 | 1187 | 849 | 690 |
| 3/5/2014 | 4406 | 3890 | 4119 |
| 3/10/2014 | 4287 | 3687 | 3654 |
| 3/21/2014 | 102 | 512 | 170 |
| 3/25/2014 | 17300 | 15000 | 13900 |
| 4/3/2014 | 33700 | 32900 | 31700 |
| 4/7/2014 | 26100 | 29400 | 27700 |
| 4/16/2014 | 32900 | 34400 | 29200 |
| 4/22/2014 | 31700 | 33500 | 31900 |
| 5/1/2014 | 39700 | 34000 | 33800 |
| 5/8/2014 | 38000 | 41800 | 25600 |
| 5/15/2014 | 1209 | 1063 | 1188 |
| 5/21/2014 | 52800 | 53400 | 34500 |
| 5/27/2014 | 32900 | 43000 | 23900 |
| 6/3/2014 | 24100 | 36700 | 29800 |
| 6/11/2014 | 20900 | 24200 | 17100 |
| 6/19/2014 | 20300 | 20500 | 13900 |
| 6/23/2014 | 495 | 193 | 198 |
| 7/9/2014 | 37500 | 34400 | 21900 |
| 7/21/2014 | 34900 | NC ₂ : | 24900 |
| 8/27/2014 | 31400 | 18200 | 17000 |
| 9/25/2014 | 23000 | 22000 | 17600 |
| 10/27/2014 | 310 | 209 | 540 |
| 11/20/2014 | 10500 | 8478 | 12800 |
| 12/23/2014 | 13500 | NC ₂ | 13100 |
| 1/28/2015 | 208 | 108 | 15000 |
| 2/27/2015 | 13200 | 4855 | 5347 |
| 3/26/2015 | 4567 | 5280 | 3260 |
| 4/20/2015 | 7434 | 7660 | 51300 |
| 5/28/2015 | 8 | 0 | 3740 |
| 6/25/2015 | 7341 | 4485 | 7246 |
| 7/21/2015 | 10200 | 7399 | 5863 |
| 8/27/2015 | 1025 | 957 | 726 |
| 9/23/2015 | 0 | 0 | 113 |

ppbv: parts per billion by volume

Figure 6
Soil Vapor Measurements
SV07

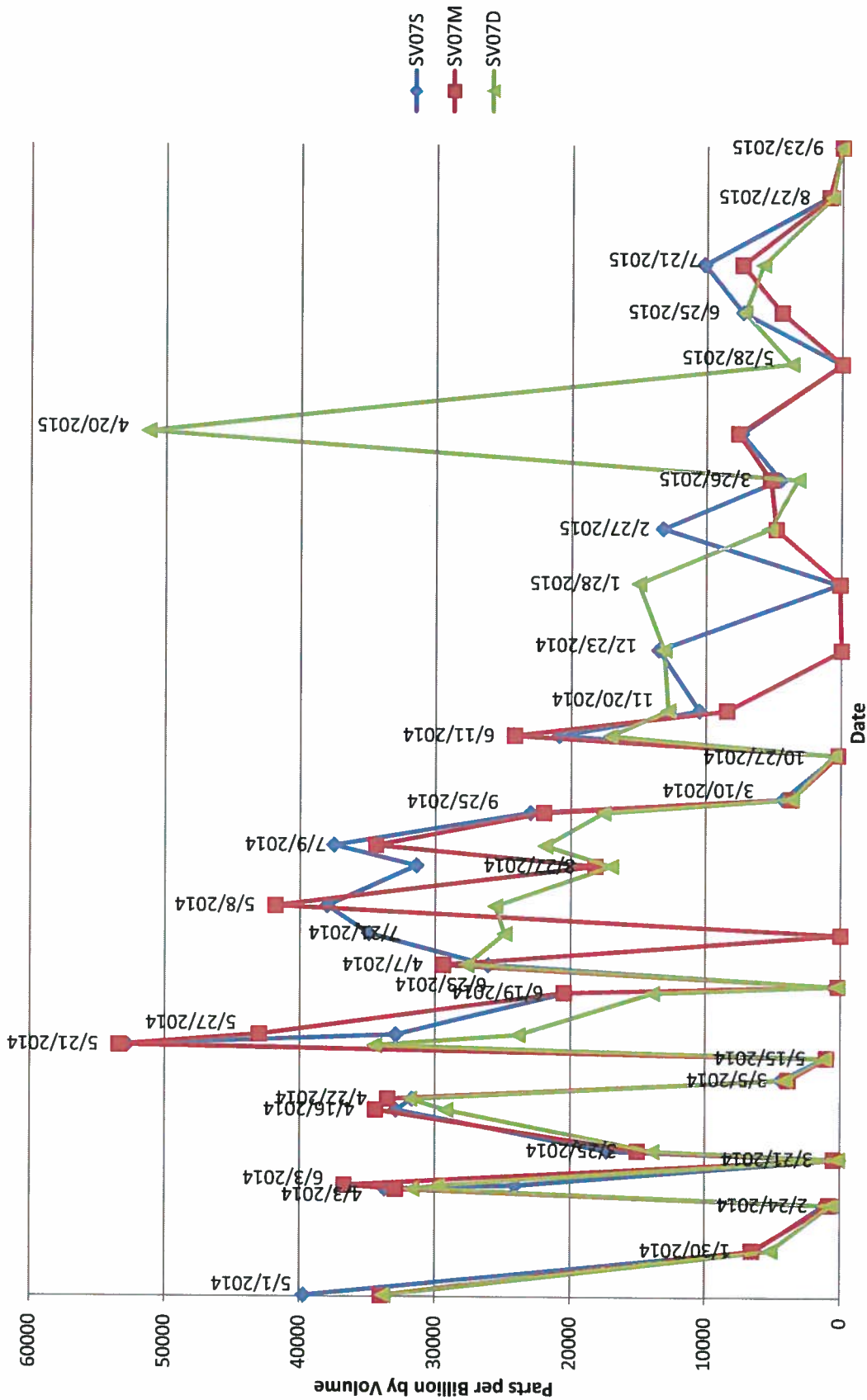


Table 7
Soil Vapor Results for SV08 (ppbv)
Historical Soil Vapor Monitoring Results - January 2014 Through Present Event
Red Hill Bulk Fuel Storage Facility

| Date | SV08 | SV08 | SV08D |
|------------|-------|-------|-------|
| 1/30/2014 | 2170 | 2698 | 2952 |
| 2/24/2014 | 601 | 423 | 428 |
| 3/5/2014 | 1814 | 2492 | 3097 |
| 3/10/2014 | 1819 | 2348 | 2274 |
| 3/21/2014 | 102 | 469 | 354 |
| 3/25/2014 | 6152 | 7880 | 7474 |
| 4/3/2014 | 12800 | 17100 | 18100 |
| 4/7/2014 | 13500 | 14300 | 17300 |
| 4/16/2014 | 12900 | 15600 | 15800 |
| 4/22/2014 | 16600 | 19300 | 21000 |
| 5/1/2014 | 15600 | 19200 | 20100 |
| 5/8/2014 | 11800 | 14100 | 13300 |
| 5/15/2014 | 419 | 1315 | 1073 |
| 5/21/2014 | 16500 | 20900 | 21200 |
| 5/27/2014 | 11200 | 15100 | 13500 |
| 6/3/2014 | 12600 | 19300 | 22300 |
| 6/11/2014 | 7109 | 10600 | 10800 |
| 6/19/2014 | 8307 | 10700 | 9120 |
| 6/23/2014 | 133 | 22 | 54 |
| 7/9/2014 | 11300 | 14900 | 15300 |
| 7/21/2014 | 13200 | 16500 | 16800 |
| 8/27/2014 | 10500 | 12700 | 12500 |
| 9/25/2014 | 10500 | 11300 | 11600 |
| 10/27/2014 | 248 | 1196 | 129 |
| 11/20/2014 | 4113 | 5894 | 4398 |
| 12/23/2014 | 7996 | 7265 | 6710 |
| 1/28/2015 | 74 | 237 | 50 |
| 2/27/2015 | 3916 | 3201 | 4689 |
| 3/26/2015 | 3867 | 6634 | 4870 |
| 4/20/2015 | 5268 | 5860 | 3343 |
| 5/28/2015 | 0 | 0 | 0 |
| 6/25/2015 | 2124 | 3323 | 3232 |
| 7/21/2015 | 3163 | 3223 | 3430 |
| 8/27/2015 | 401 | 549 | 475 |
| 9/23/2015 | 0 | 0 | 0 |

ppbv: parts per billion by volume

Figure 7
Soil Vapor Measurements
SV08

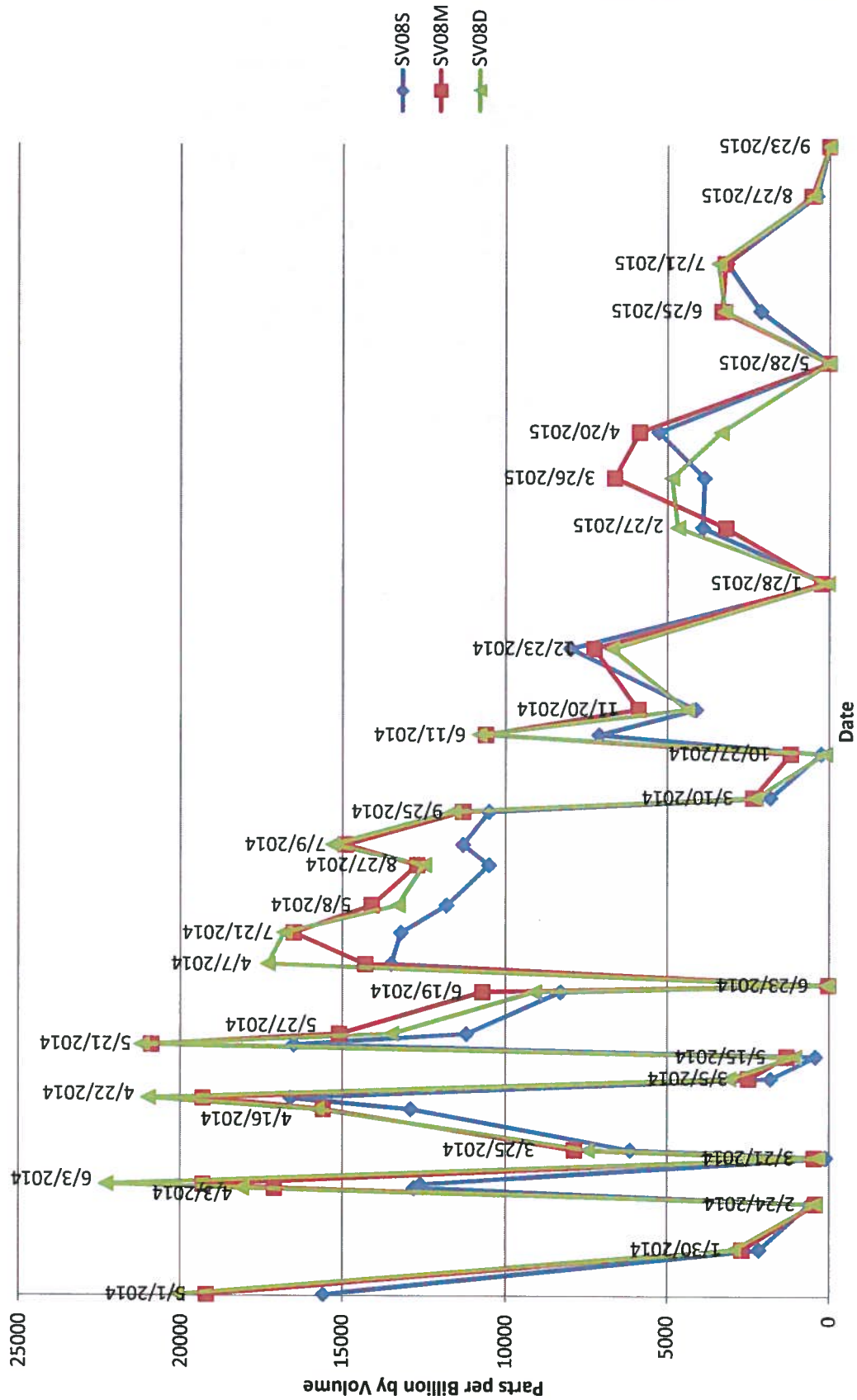


Table 8
Soil Vapor Results for SV09 (ppbv)
Historical Soil Vapor Monitoring Results - January 2014 Through Present Event
Red Hill Bulk Fuel Storage Facility

| Date | SV09S | SV09M | SV09D |
|------------|-------|-------|-------|
| 1/30/2014 | 1488 | 1963 | 2408 |
| 2/24/2014 | 307 | 330 | 319 |
| 3/5/2014 | 915 | 1474 | 1614 |
| 3/10/2014 | 777 | 1569 | 1656 |
| 3/25/2014 | 2629 | 4246 | 5465 |
| 4/7/2014 | 5750 | 9329 | 10400 |
| 4/22/2014 | 7038 | 12600 | 12200 |
| 5/8/2014 | 6407 | 10100 | 10400 |
| 5/21/2014 | 10300 | 14100 | 14500 |
| 5/27/2014 | 4725 | 8296 | 10200 |
| 6/11/2014 | 5415 | 8278 | 10100 |
| 6/23/2014 | 10 | 7 | 22 |
| 7/21/2014 | 6459 | 9981 | 12000 |
| 8/27/2014 | 7069 | 9198 | 10200 |
| 9/25/2014 | 6795 | 8583 | 8125 |
| 10/27/2014 | 95 | 127 | 185 |
| 11/20/2014 | 3016 | 3303 | 4102 |
| 12/23/2014 | 4832 | 4555 | 5213 |
| 1/28/2015 | 41 | 43 | 87 |
| 2/27/2015 | 2106 | 2286 | 2689 |
| 3/26/2015 | 3101 | 2997 | 4885 |
| 4/20/2015 | 1456 | 2342 | 2410 |
| 5/28/2015 | 0 | 0 | 2 |
| 6/25/2015 | 2527 | 2039 | 3074 |
| 7/21/2015 | 1734 | 2331 | 2383 |
| 8/27/2015 | 360 | 859 | 224 |
| 9/23/2015 | 5 | 11 | 44 |

ppbv: parts per billion by volume

Figure 8
Soil Vapor Measurements
SV09

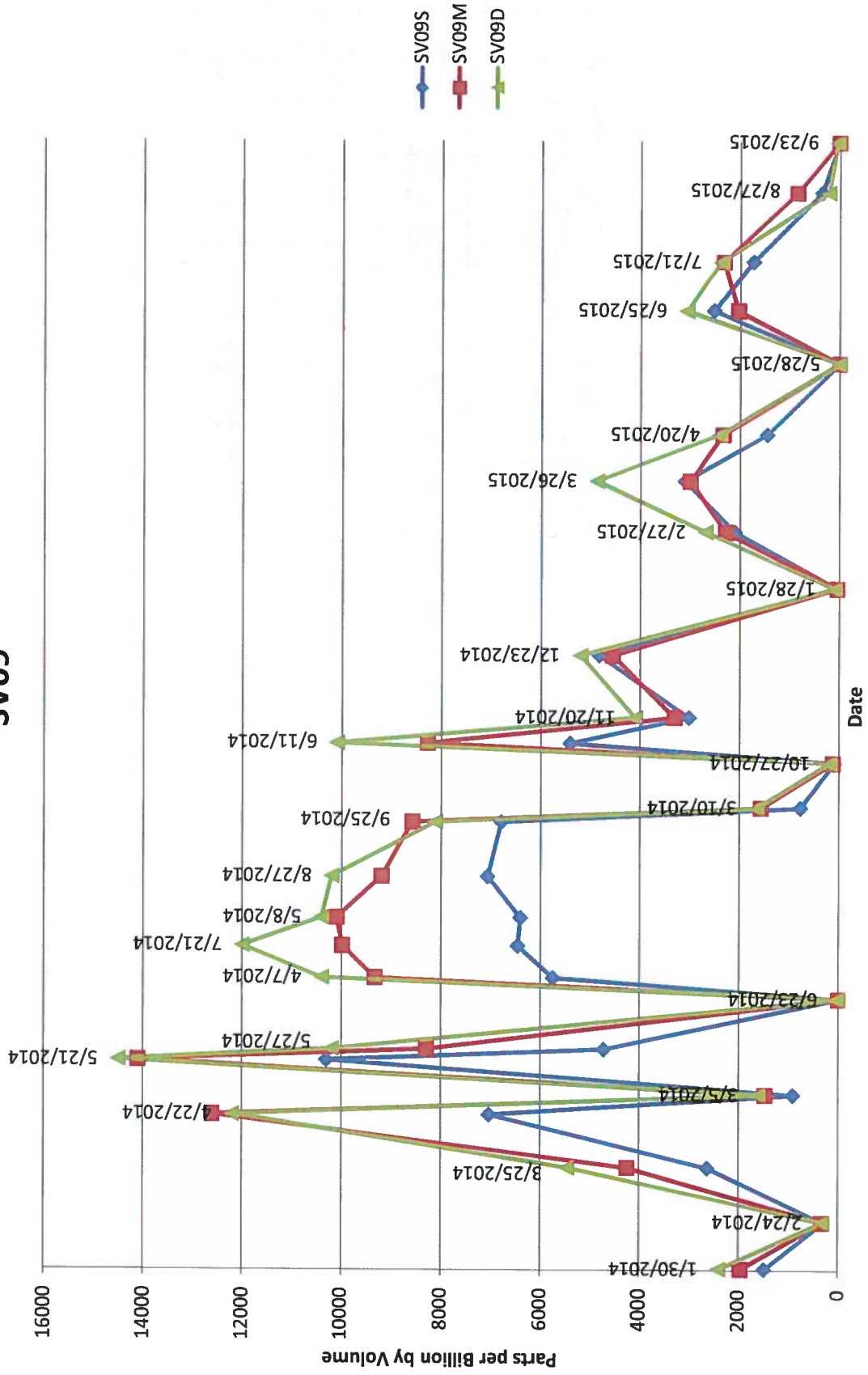


Table 9
Soil Vapor Results for SV10 (ppbv)
Historical Soil Vapor Monitoring Results - January 2014 Through Present Event
Red Hill Bulk Fuel Storage Facility

| Date | SV10S | SV10M |
|------------|-------|-------|
| 1/30/2014 | 483 | 358 |
| 2/24/2014 | 165 | 147 |
| 3/5/2014 | 365 | 45 |
| 3/10/2014 | 280 | 73 |
| 3/10/2014 | 280 | 73 |
| 3/25/2014 | 1148 | 493 |
| 4/7/2014 | 3364 | 2393 |
| 4/22/2014 | 3381 | 3335 |
| 5/8/2014 | 2876 | 3278 |
| 5/21/2014 | 3836 | 3776 |
| 5/27/2014 | 2850 | 2424 |
| 6/11/2014 | 2037 | 4089 |
| 6/23/2014 | 10 | 7 |
| 7/21/2014 | 3334 | 3640 |
| 8/27/2014 | 3650 | 3073 |
| 9/25/2014 | 4093 | 3720 |
| 10/27/2014 | 62 | 117 |
| 11/20/2014 | 2124 | 1069 |
| 12/23/2014 | 2225 | 1543 |
| 1/28/2015 | 46 | 74 |
| 2/27/2015 | 1187 | 598 |
| 3/26/2015 | 104 | 97 |
| 4/20/2015 | 741 | 1175 |
| 5/28/2015 | 0 | 0 |
| 6/25/2015 | 959 | 839 |
| 7/21/2015 | 823 | 822 |
| 8/27/2015 | 292 | 363 |
| 9/23/2015 | 71 | 3 |

ppbv: parts per billion by volume

Figure 9
Soil Vapor Measurements
SV10

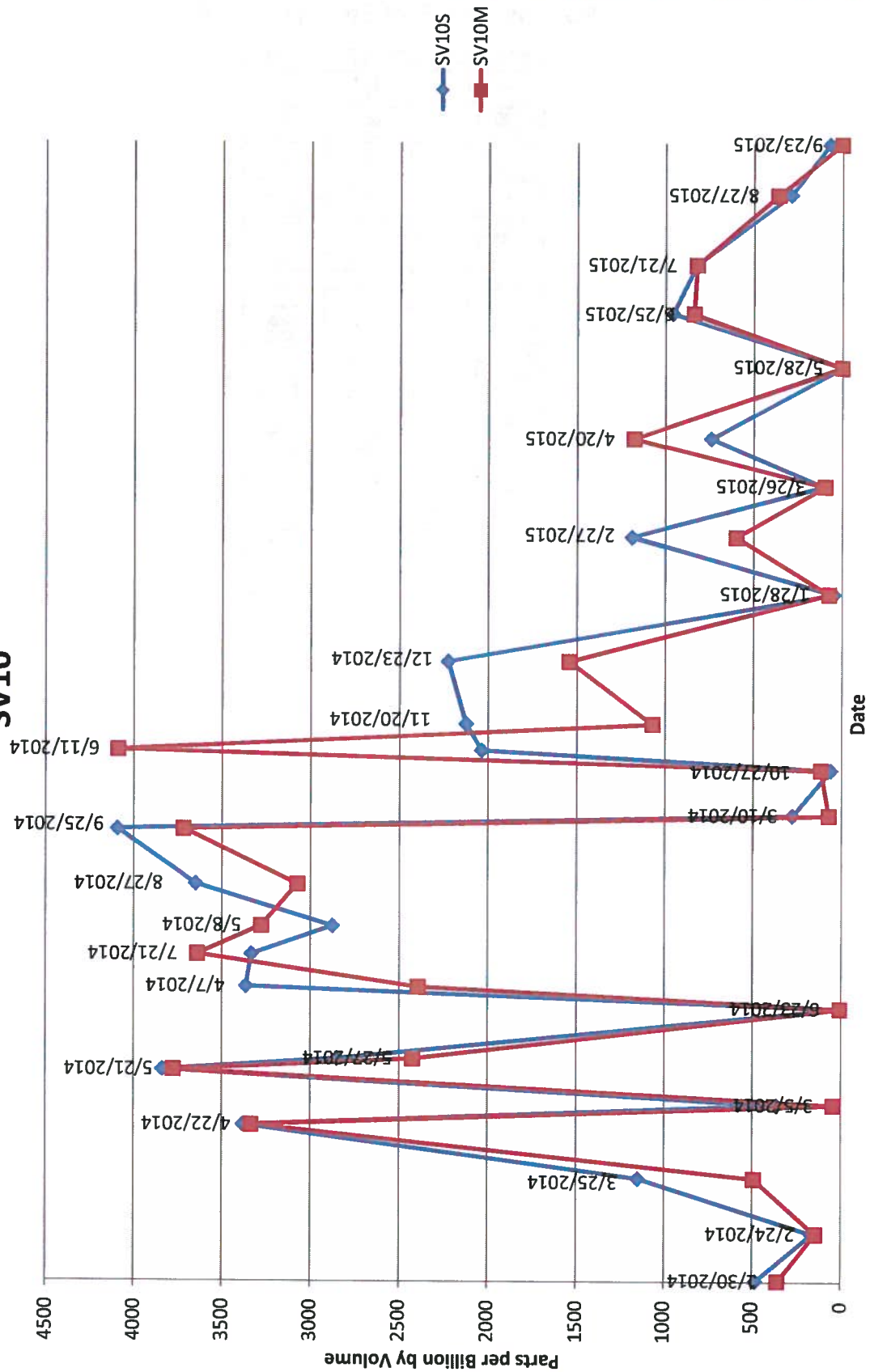


Table 10
Soil Vapor Results for SV11 (ppbv)
Historical Soil Vapor Monitoring Results - January 2014 Through Present Event
Red Hill Bulk Fuel Storage Facility

| Date | SV11M | SV11D |
|------------|-------|-----------------|
| 1/30/2014 | 374 | NC ₂ |
| 2/24/2014 | 307 | NC ₂ |
| 3/28/2014 | 53 | NC ₂ |
| 4/21/2014 | 167 | NC ₂ |
| 5/28/2014 | 959 | NC ₂ |
| 6/24/2014 | 17 | NC ₂ |
| 7/22/2014 | 240 | NC ₂ |
| 8/27/2014 | 3218 | NC ₂ |
| 9/25/2014 | 3185 | NC ₂ |
| 10/27/2014 | 154 | NC ₂ |
| 11/20/2014 | 1182 | NC ₂ |
| 12/23/2014 | 1261 | NC ₂ |
| 1/28/2015 | 99 | NC ₂ |
| 2/27/2015 | 1056 | NC ₂ |
| 3/26/2015 | 2294 | NC ₂ |
| 4/20/2015 | 835 | NC ₂ |
| 5/28/2015 | 4184 | NC ₂ |
| 6/25/2015 | 9065 | NC ₂ |
| 7/21/2015 | 10200 | NC ₂ |
| 8/27/2015 | 5595 | NC ₂ |
| 9/23/2015 | 2584 | NC ₂ |

ppbv: parts per billion by volume

NC₂: Not collected due to an obstruction
in the vapor line

Figure 10
Soil Vapor Measurements
SV11

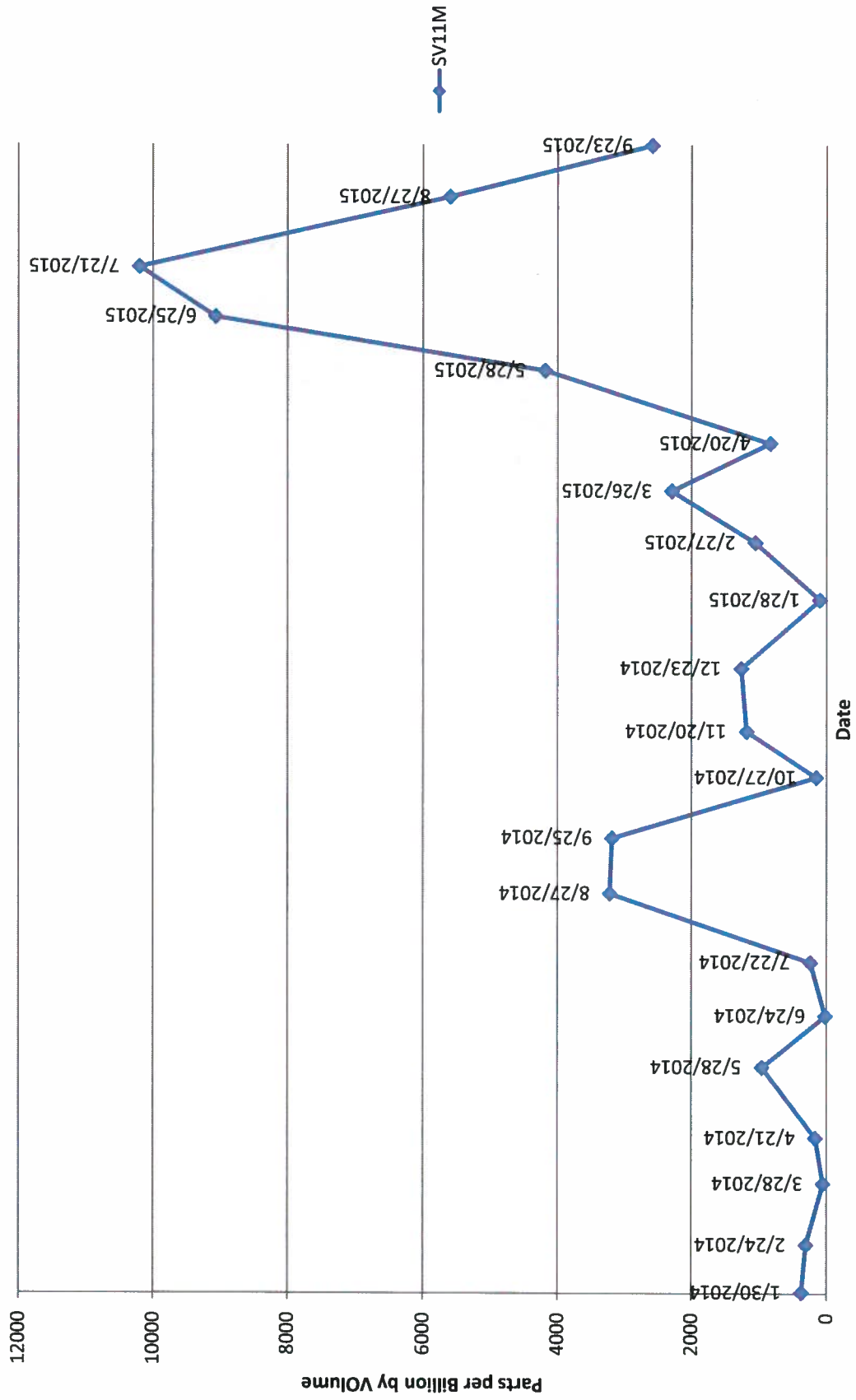


Table 11
Soil Vapor Results for SV12 (ppbv)
Historical Soil Vapor Monitoring Results - January 2014 Through Present Event
Red Hill Bulk Fuel Storage Facility

| Date | SV12S | SV12M | SV12D |
|------------|-------|-------|-------|
| 1/30/2014 | 270 | 200 | 264 |
| 2/24/2014 | 135 | 148 | 215 |
| 3/28/2014 | 45 | 42 | 66 |
| 4/21/2014 | 237 | 166 | 290 |
| 5/28/2014 | 743 | 774 | 810 |
| 6/24/2014 | 374 | 244 | 326 |
| 7/22/2014 | 232 | 217 | 290 |
| 8/27/2014 | 2769 | 2607 | 2469 |
| 9/25/2014 | 1979 | 2338 | 1877 |
| 10/27/2014 | 77 | 144 | 81 |
| 11/20/2014 | 1147 | 721 | 512 |
| 12/23/2014 | 1075 | 632 | 834 |
| 1/28/2015 | 15 | 46 | 63 |
| 2/27/2015 | 609 | 396 | 331 |
| 3/26/2015 | 1203 | 964 | 992 |
| 4/20/2015 | 681 | 595 | 728 |
| 5/28/2015 | 0 | 0 | 0 |
| 6/25/2015 | 897 | 673 | 792 |
| 7/21/2015 | 940 | 875 | 490 |
| 8/27/2015 | 1047 | 1016 | 601 |
| 9/23/2015 | 64 | 8 | 1 |

ppbv: parts per billion by volume

Figure 11
Soil Vapor Measurements
SV12

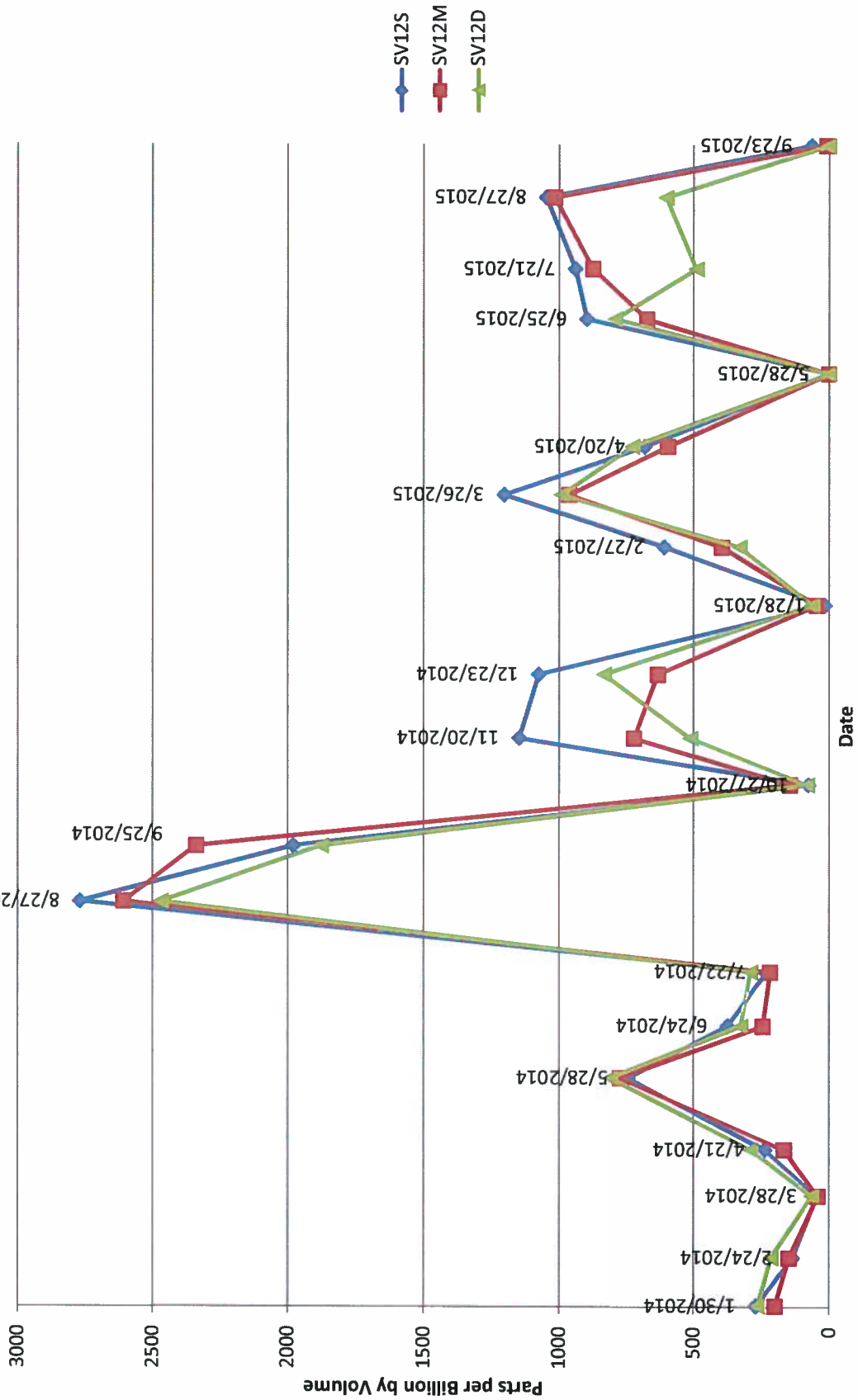


Table 12
Soil Vapor Results for SV13 (ppbv)
Historical Soil Vapor Monitoring Results - January 2014 Through Present Event
Red Hill Bulk Fuel Storage Facility

| Date | SV13S | SV13 | SV13D |
|-------------|--------------|-------------|--------------|
| 1/30/2014 | 440 | 929 | 1109 |
| 2/24/2014 | 116 | 98 | 99 |
| 3/28/2014 | 90 | 151 | 332 |
| 4/21/2014 | 198 | 575 | 560 |
| 5/28/2014 | 89 | 1031 | 1615 |
| 6/24/2014 | 161 | 616 | 727 |
| 7/22/2014 | 495 | 815 | 1191 |
| 8/27/2014 | 2657 | 4638 | 2877 |
| 9/25/2014 | 1414 | 2193 | 2562 |
| 10/27/2014 | 149 | 145 | 205 |
| 11/20/2014 | 1093 | 1208 | 738 |
| 12/23/2014 | 1148 | 1610 | 1621 |
| 1/28/2015 | 85 | 66 | 75 |
| 2/27/2015 | 822 | 973 | 1309 |
| 3/26/2015 | 1889 | 2160 | 2562 |
| 4/20/2015 | 774 | 939 | 1145 |
| 5/28/2015 | 0 | 0 | 0 |
| 6/25/2015 | 640 | 1178 | 1594 |
| 7/21/2015 | 682 | 1079 | 1431 |
| 8/27/2015 | 654 | 659 | 412 |
| 9/23/2015 | 37 | 10 | 59 |

ppbv: parts per billion by volume

Figure 12
Soil Vapor Measurements
SV13

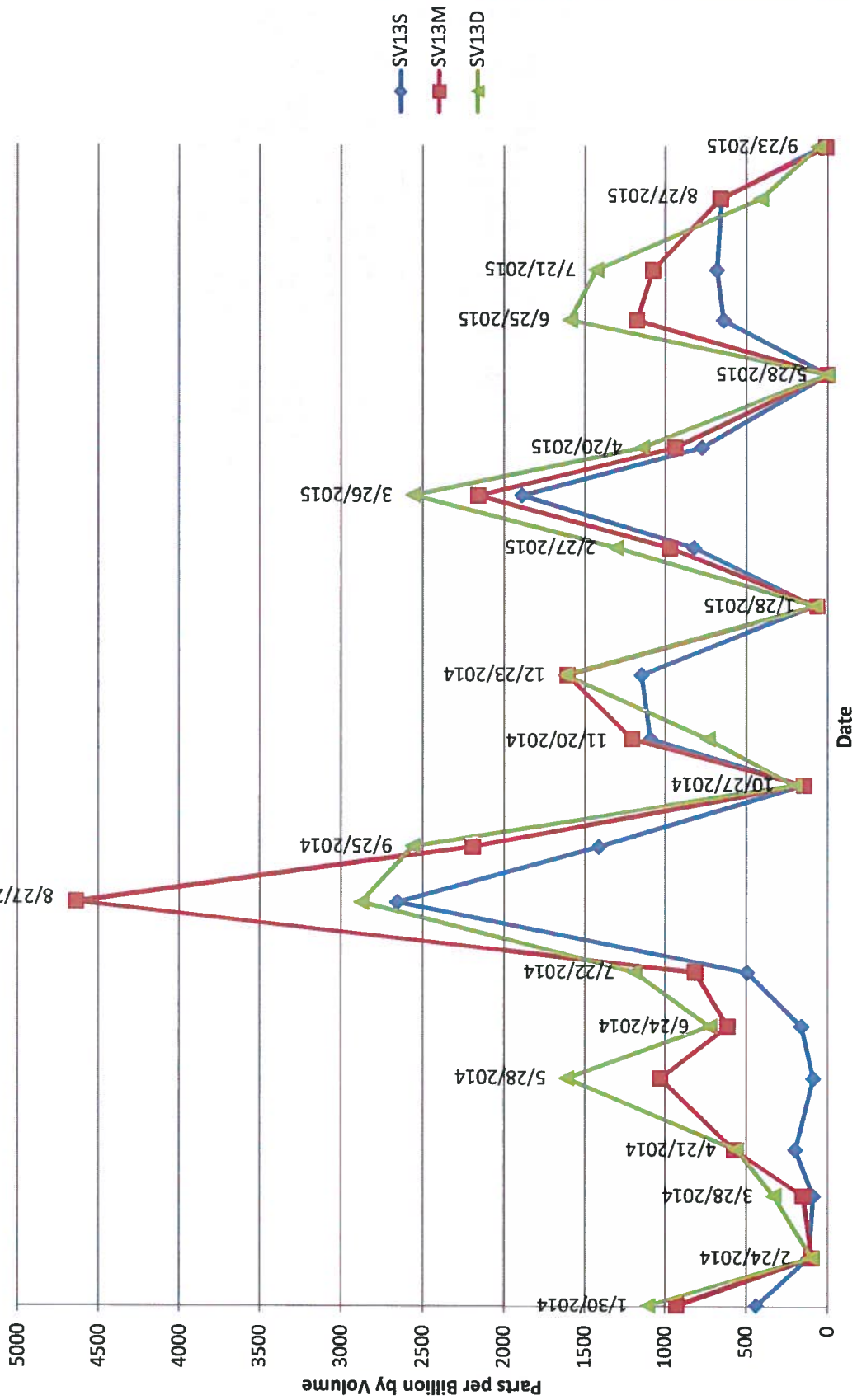


Table 13
Soil Vapor Results for SV14 (ppbv)
Historical Soil Vapor Monitoring Results - January 2014 Through Present Event
Red Hill Bulk Fuel Storage Facility

| Date | SV14S | SV14M | SV14D |
|------------|-------|-------|-------|
| 3/28/2014 | 82 | 261 | 170 |
| 4/21/2014 | 282 | 253 | 349 |
| 5/28/2014 | 471 | 640 | 697 |
| 6/24/2014 | 175 | 523 | 824 |
| 7/22/2014 | 323 | 474 | 634 |
| 8/27/2014 | 1376 | 1248 | 1327 |
| 9/25/2014 | 1295 | 1023 | 1067 |
| 10/27/2014 | 0 | 123 | 127 |
| 11/20/2014 | 564 | 678 | 422 |
| 12/23/2014 | 582 | 548 | 654 |
| 1/28/2015 | 44 | 24 | 85 |
| 2/27/2015 | 430 | 371 | 648 |
| 3/26/2015 | 996 | 937 | 1088 |
| 4/20/2015 | 191 | 111 | 434 |
| 5/28/2015 | 0 | 0 | 0 |
| 6/25/2015 | 560 | 550 | 986 |
| 7/21/2015 | 469 | 454 | 500 |
| 8/27/2015 | 711 | 892 | 344 |
| 9/23/2015 | 148 | 66 | 62 |

ppbv: parts per billion by volume

NC: Not collected due to maintenance work

Figure 13
Soil Vapor Measurements
SV14

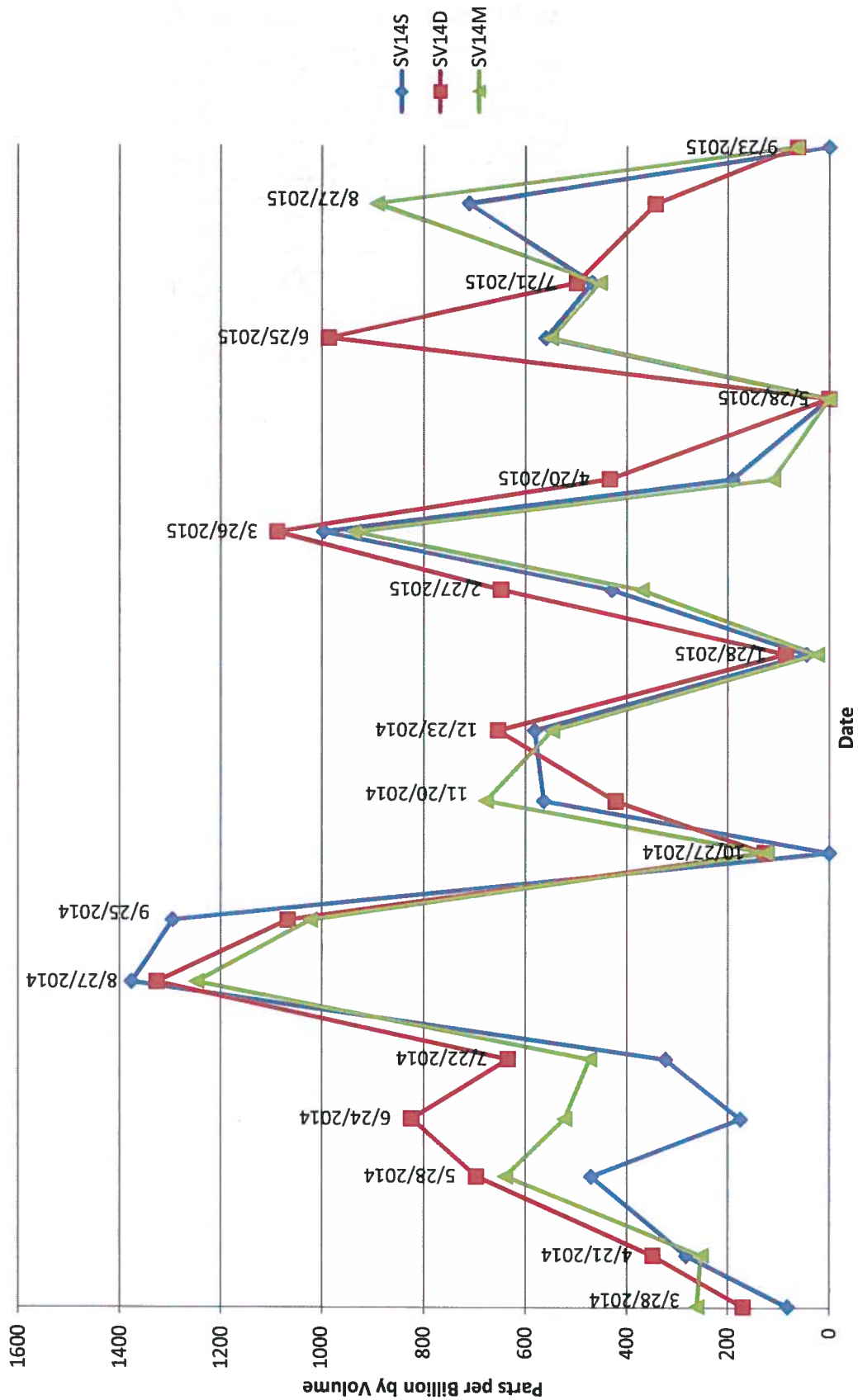


Table 14
Soil Vapor Results for SV15 (ppbv)
Historical Soil Vapor Monitoring Results - January 2014 Through Present Event
Red Hill Bulk Fuel Storage Facility

| Date | SV15S | SV15M | SV15D |
|-------------|--------------|-----------------|--------------|
| 1/30/2014 | 376 | NC ₂ | 1025 |
| 2/24/2014 | 32 | NC ₂ | 65 |
| 3/28/2014 | 285 | NC ₂ | 372 |
| 4/21/2014 | 302 | NC ₂ | 623 |
| 5/28/2014 | 558 | NC ₂ | 1071 |
| 6/24/2014 | 240 | NC ₂ | 260 |
| 7/22/2014 | 663 | NC ₂ | 1321 |
| 8/27/2014 | 1916 | NC ₂ | 1026 |
| 9/25/2014 | 1857 | NC ₂ | 3159 |
| 10/27/2014 | 0 | NC ₂ | 0 |
| 11/20/2014 | 754 | NC ₂ | 539 |
| 12/23/2014 | 673 | NC ₂ | 886 |
| 1/28/2015 | 62 | NC ₂ | 71 |
| 2/27/2015 | 687 | NC ₂ | 956 |
| 3/26/2015 | 1270 | NC ₂ | 1585 |
| 4/20/2015 | 600 | NC ₂ | 651 |
| 5/28/2015 | 0 | NC ₂ | 0 |
| 6/25/2015 | 851 | NC ₂ | 1239 |
| 7/21/2015 | 515 | NC ₂ | 927 |
| 8/27/2015 | 586 | NC ₂ | 1126 |
| 9/23/2015 | 193 | NC ₂ | 185 |

ppbv: parts per billion by volume

NC₁: Not collected due to an obstruction in the vapor line

Figure 14
Soil Vapor Measurements
SV15

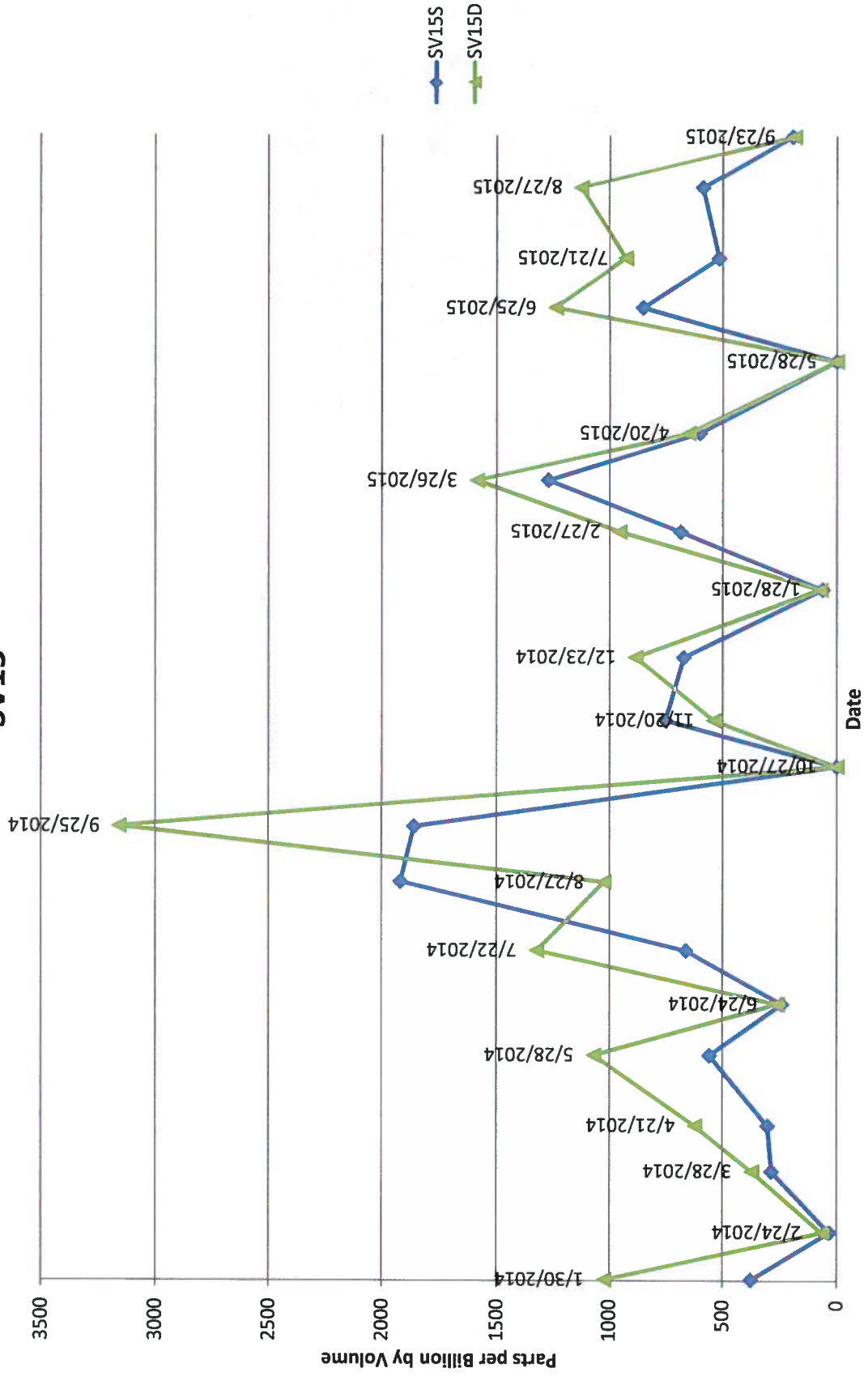


Table 15
Soil Vapor Results for SV16 (ppbv)
Historical Soil Vapor Monitoring Results - January 2014 Through Present Event
Red Hill Bulk Fuel Storage Facility

| Date | SV16S | SV16M | SV16D |
|------------|-------|-------|-------|
| 1/30/2014 | 139 | 102 | 95 |
| 2/24/2014 | 44 | 24 | 65 |
| 3/28/2014 | 388 | 281 | 220 |
| 4/21/2014 | 298 | 302 | 253 |
| 5/28/2014 | 348 | 334 | 327 |
| 6/24/2014 | 107 | 169 | 158 |
| 7/22/2014 | 552 | 455 | 488 |
| 8/27/2014 | 602 | 590 | 1026 |
| 9/25/2014 | 1226 | 1143 | 719 |
| 10/27/2014 | 0 | 0 | 0 |
| 11/20/2014 | 458 | 216 | 274 |
| 12/23/2014 | 470 | 442 | 363 |
| 1/28/2015 | 63 | 19 | 54 |
| 2/27/2015 | 333 | 162 | 310 |
| 3/26/2015 | 113 | 116 | 884 |
| 4/20/2015 | 297 | 303 | 393 |
| 5/28/2015 | 0 | 0 | 0 |
| 6/25/2015 | 531 | 346 | 432 |
| 7/28/2015 | 44 | 93 | 50 |
| 8/27/2015 | 689 | 777 | 349 |
| 9/23/2015 | 477 | 367 | 220 |

ppbv: parts per billion by volume

Figure 15
Soil Vapor Measurements
SV16

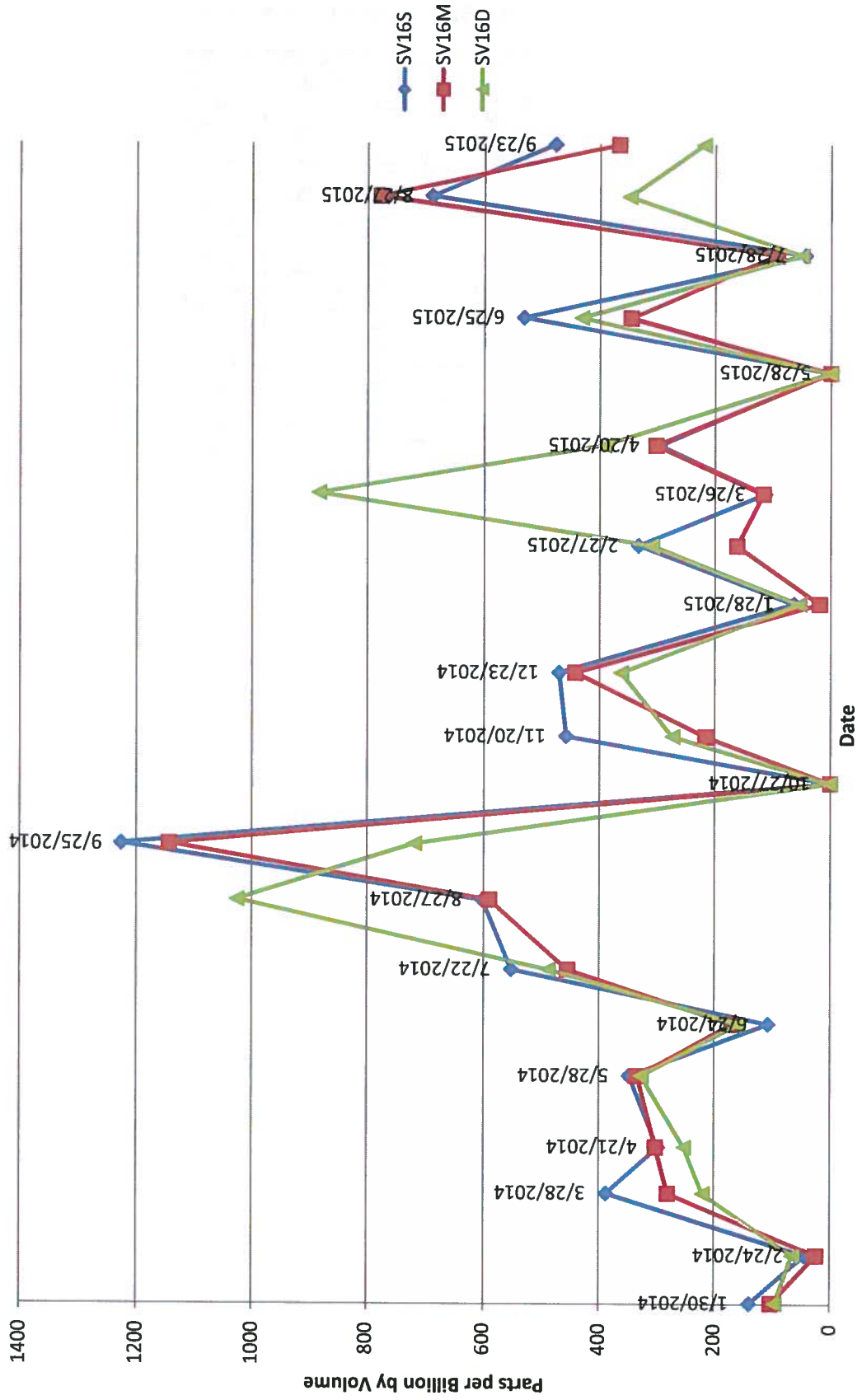


Table 16
Soil Vapor Results for SV17 (ppbv)
Historical Soil Vapor Monitoring Results - January 2014 Through Present Event
Red Hill Bulk Fuel Storage Facility

| Date | SV17S | SV17M | SV17D |
|------------|-------|-------|-------|
| 1/30/2014 | 1598 | 2378 | 2980 |
| 2/24/2014 | 4069 | 3944 | 3884 |
| 3/28/2014 | 5033 | 5987 | 6391 |
| 4/21/2014 | 5221 | 4941 | 4541 |
| 5/28/2014 | 2452 | 3239 | 3827 |
| 6/24/2014 | 3138 | 2865 | 2892 |
| 7/22/2014 | 1578 | 2156 | 2804 |
| 8/27/2014 | 1419 | 2492 | 2954 |
| 9/25/2014 | 1468 | 2056 | 1043 |
| 10/28/2014 | 190 | 205 | 257 |
| 11/20/2014 | 618 | 849 | 998 |
| 12/23/2014 | 805 | 1126 | 1319 |
| 1/28/2015 | 170 | 202 | 282 |
| 2/27/2015 | 366 | 530 | 877 |
| 3/26/2015 | 3095 | 2472 | 3938 |
| 4/20/2015 | 510 | 734 | 952 |
| 5/28/2015 | 36 | 268 | 11 |
| 6/25/2015 | 462 | 755 | 955 |
| 7/28/2015 | 117 | 243 | 275 |
| 8/27/2015 | 647 | 779 | 1045 |
| 9/23/2015 | 237 | 334 | 358 |

ppbv: parts per billion by volume

Figure 16
Soil Vapor Measurements
SV17

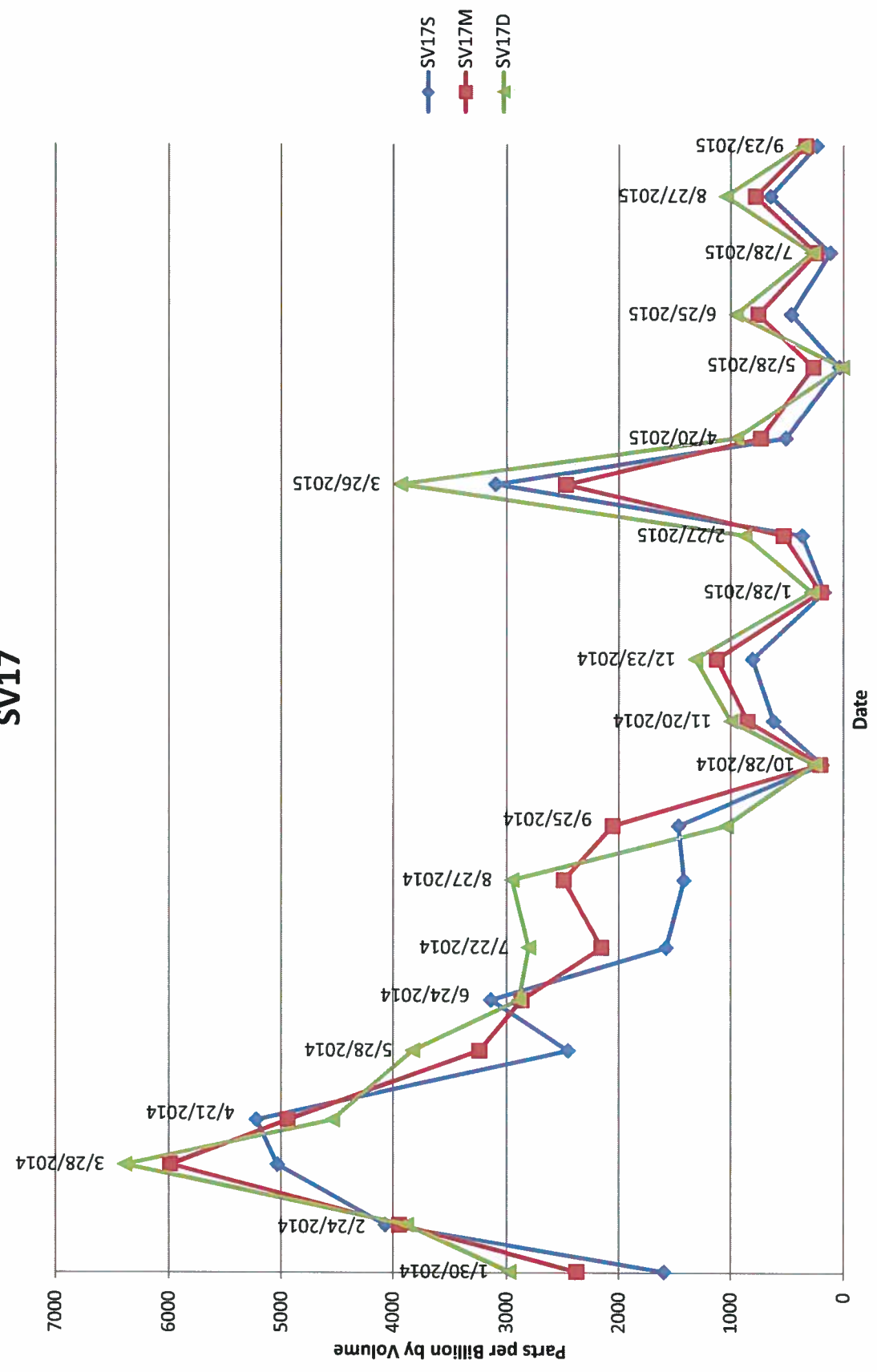


Table 17
Soil Vapor Results for SV18 (ppbv)
Historical Soil Vapor Monitoring Results - January 2014 Through Present Event
Red Hill Bulk Fuel Storage Facility

| Date | SV18S | SV18D |
|------------|-----------------|-----------------|
| 1/30/2014 | 1949 | 2116 |
| 2/24/2014 | 2674 | 3241 |
| 3/28/2014 | 1392 | 2545 |
| 4/21/2014 | 1973 | 2082 |
| 5/28/2014 | 2856 | 2607 |
| 6/24/2014 | 1727 | 2050 |
| 7/22/2014 | 1474 | 2823 |
| 8/27/2014 | 137 | 1478 |
| 9/25/2014 | 3361 | 3679 |
| 10/28/2014 | 2001 | 2008 |
| 11/20/2014 | 3033 | 3404 |
| 12/23/2014 | 3026 | 3421 |
| 1/28/2015 | 1179 | 1762 |
| 2/27/2015 | 1154 | 1398 |
| 3/26/2015 | NC ₁ | NC ₁ |
| 4/20/2015 | 20100 | 38400 |
| 5/28/2015 | 47 | 1191 |
| 6/25/2015 | 17200 | 14200 |
| 7/28/2015 | 17600 | 19100 |
| 8/27/2015 | 18000 | 15000 |
| 9/23/2015 | 9188 | 11625 |

ppbv: parts per billion by volume
 NC₁: Not collected due to maintenance
 work being performed on the tank

Figure 17
Soil Vapor Measurements
SV18

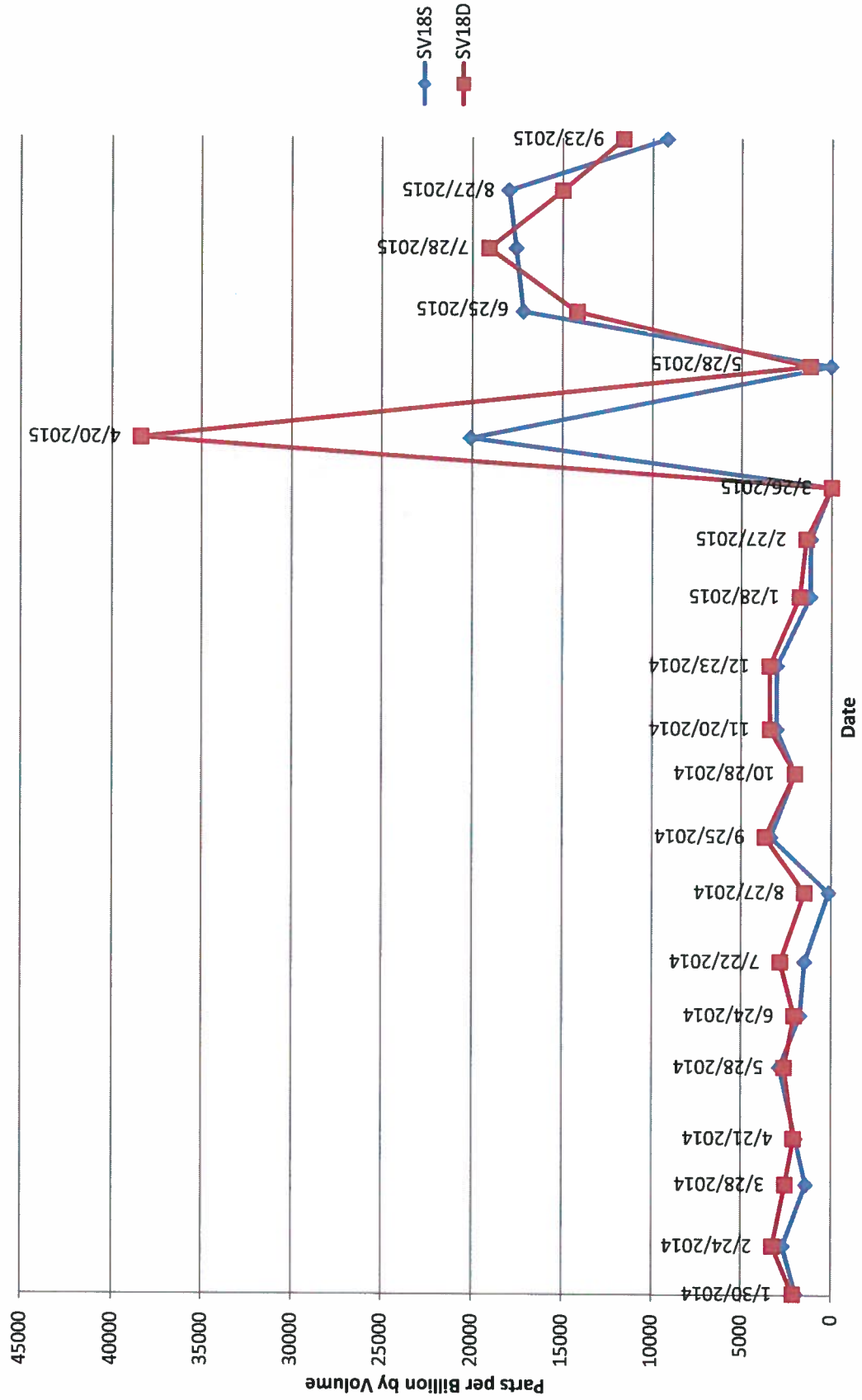


Table 18
Soil Vapor Results for SV20 (ppbv)
Historical Soil Vapor Monitoring Results - January 2014 Through Present Event
Red Hill Bulk Fuel Storage Facility

| Date | SV2 | SV20M | SV20D |
|------------|------|-------|-------|
| 1/30/2014 | 560 | 584 | 697 |
| 2/24/2014 | 571 | 505 | 293 |
| 3/28/2014 | 214 | 242 | 118 |
| 4/21/2014 | 526 | 561 | 545 |
| 5/28/2014 | 1139 | 1451 | 1438 |
| 6/24/2014 | 1160 | 1271 | 1143 |
| 7/22/2014 | 1587 | 1877 | 2213 |
| 8/27/2014 | 630 | 1526 | 1618 |
| 9/25/2014 | 1531 | 1561 | 1472 |
| 10/28/2014 | 283 | 208 | 211 |
| 11/20/2014 | 620 | 566 | 983 |
| 12/23/2014 | 1227 | 1273 | 1516 |
| 1/28/2015 | 101 | 72 | 80 |
| 2/27/2015 | 495 | 575 | 898 |
| 3/26/2015 | 2211 | 1593 | 2041 |
| 4/20/2015 | 3939 | 4586 | 3207 |
| 5/28/2015 | 3 | 29 | 11 |
| 6/25/2015 | 2169 | 2456 | 2209 |
| 7/28/2015 | 1840 | 1994 | 1724 |
| 8/27/2015 | 2117 | 2222 | 2673 |
| 9/23/2015 | 259 | 379 | 455 |

ppbv: parts per billion by volume

Figure 18
Soil Vapor Measurements
SV20

